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ABSTRACT

Derived from reported research findings, non-research writings, and personal observations and experiences relative to health services, this paper focuses on the small rural community, suggesting research hypotheses and community planning possibilities. Specifically, this paper: (1) outlines five frequently expected functions/outcomes of community health services (improved health status; provision of primary care; security of care; medical-legal functions; and community development); (2) identifies five types of resources useful in achieving health outcomes (health manpower; health facilities; health habits/lifestyles; environment; and genetic stock of the population); (3) discusses the relationship between functions and resources and the sources of differing expectations re: that relationship (a chart is presented identifying such relationships as empirically verified or logically expected, questionable, or nonrelevant, NR). Improved health status is correlated with all resources but physicians and facilities (labeled questionable); primary care provision is correlated with all resources but heredity (labeled NR); security of care is correlated with all but health habits, environment, and heredity (labeled NR); medical-legal functions are correlated only with physicians (all other resources labeled NR); community development functions are correlated with all resources except lifestyle and heredity (labeled NR). (JC)

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SOME MANIFEST, LATENT AND MISCONCEIVED FUNCTIONS ABOUT MEDICAL AND HEALTH CARE FOR RURAL COMMUNITIES

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Some Manifest, Latent and Misconceived Functions About Medical and Health Care for Rural Communities[1]

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Introduction

In conducting health services research, guiding communities in health services planning, and helping communities with development efforts, it has become apparent that different groups of individuals hold different expectations regarding the desired outcomes of a community's "health service system," here conceived as a subsystem in community.[2] Further, in order to achieve these differing outcomes, different types of resources are perceived as being effective. In some instances the expected relationships are quite manifest; at other times more latent. Some of the expected relationships between outcomes and needed resources are supported by research; in other cases research would indicate another alternative.

These differing expectations and misconceptions regarding outcomes of health services and the resources necessary to achieve them need to be explicated, perhaps more than ever before. Health care costs are rapidly rising (Health Resources Administration, 1975), new health legislation is on the scene,[3] citizen participation in planning health services is increasing[4] and maldistribution of manpower resources continues to persist (Cordes, 1976). Community leaders in particular need help in sorting out just what they want or expect from their services. Professionals assisting communities need to pay particular attention to the information and guidelines they provide.

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The purposes of this paper are to: (1) outline five frequently expected functions or outcomes of community health services, (2) identify five types of resources useful in achieving the outcomes, and (3) discuss the relationship between functions and resources along with sources of differing expectations regarding the relationship between functions and resources.

Basically, the focus of the paper is on the smaller, more rural community since this is where resources tend to become more limited and concerns greater. The paper represents a blending of reported research findings, non-research writings about health services and observations and experiences of the writer. It suggests some hypotheses for research and contains cautions for community planners and development workers.

Expected Outcomes

As noted earlier, a "health services delivery system" in a community can be viewed as a structural subsystem having a number of different functions or outcomes for the community as a whole and/or individual families and/or persons in the community. Some of these outcomes are directly related to therapeutic and preventive health tasks; others are not directly related to health but are nonetheless just as important to certain segments of the community. The functions outlined below are not meant to be exhaustive, only illustrative of several divergent and relevant functions.

Perhaps one of the most commonly expected and discussed outcomes of a community's health services system, especially among health planners and researchers, is improved health status. The desired change in health status can be defined in terms of decreased morbidity or decreased mortality, or in more positive terms of increased perceived health status, higher levels

of satisfaction, or more effective performance of work, family, civic and other social roles.[5] Health professionals, particularly those engaged in health planning work, attempt to strive for maximization of health status, however it be defined. Researchers, too, frequently examine factors associated with health status.

A second frequently expected function of a health service is provision of primary care. Primary care is here defined as "that type of care that most of the people need most of the time" (American Medical Association, 1972). Another apt definition is "first line care" (White, 1967). Given the efforts expended by many rural communities to get another, or a, "family doctor," it would appear that provision of primary care is a very important function in the eyes of community residents. Health planners, too, consider provision of primary care to be important.[6]

Yet a third function of health services is "security of care."[7] This function of health services is related to primary health care; however, the emphasis here is more on a psychological state than an actual use of primary health care services. This function is measured by the degree to which residents can complete to their satisfaction an answer to the question "What would happen if . . . ?", with the question centering on some aspect of potentially needed health care. Where distance to care is perceived as great, where there is uncertainty of hours of operation of a service, and/or where transportation problems loom large, alleviation of anxiety about care is an important sought after outcome.

The fourth, and the last health related function of a community's health service system, includes medical-legal functions. This category does not include functions in which patient care is provided but rather functions involving various types of legal certification by health professionals.

From my experience, I judge this to be a very important function of the health care system in the eyes of community residents.

This medical-legal function tends to be more latent and implicit rather than an explicit function. Community residents seldom give it much thought until the need for it, usually infrequent, arises. Included in this category would be securing required physical examinations for employment, school related activities, operation of a motor vehicle, and procurement of life insurance. Also included here are legal requirements for physician coverage at various school sports events. In at least one state, Pennsylvania, the state association regulating school sports events (PIAA) requires a physician to be present at all PIAA sanctioned football games. Some smaller rural communities with high school football teams have found themselves nearly forfeiting a game for lack of physician coverage. One community in particular with which I have worked has found itself driving out of town to bring in a seventy-year-old physician to "cover" sports events. I doubt this problem is widespread or viewed as important by health professionals; nevertheless, it is viewed by residents in some communities as a function which the health service system must fulfill.

The fifth function of community health services discussed here, and one not related to health, is the ability of health services to contribute to <u>community development</u>. This paper will not pursue any definition of "development." The point being made here is that whether development is defined in terms of population growth, increased jobs or income, increased community pride and "betterment," or some other criteria, health services would seem to play an important function in enhancing development of a community. Community development organizations tend to believe that adequate services, including health services, increase the chance of attracting

industry. As for industrial development, experience with community work indicates that industries do look for certain services before locating in a community, and health services have been cited as a fairly important service category.[8] This development function of health services is hypothesized here as being recognized more by groups concerned about development of the community than the average community resident.

There are, then, five functions which health services can perform in a community. Four of these are here classified as being directly related to health while the fifth is related to community development. To some extent the second, third and fourth functions noted above--provision of primary care, security of care and medical-legal functions--can be conceived as helping to perform the first function, improvement of health status. That is, primary care should help to reduce time lost from work and school as well as increase general well-being. Adequate security of care, through alleviation of any persistent anxiety or concerns, may lead to higher levels of health. A number of the medical-legal certification functions are designed to prevent accidents or provide immediate attention to accidents that do occur, thereby enhancing health status. Although they might be subsumed under the function of improving health status, these three functions are here considered separately and at the same level as that of improving health status because: (1) they represent functions which appear to be important to community residents, and (2) it is hypothesized that community residents usually do not or cannot see such a functional interdependence between functions.

Resources

For purposes of this paper five major categories of health resources are identified. As was indicated for the preceding list of functions, this list

of resources is not meant to be exhaustive. The five were selected on the basis of: (1) the writer's judgment of the resources deemed necessary for performance of any one or more of the functions identified earlier, (2) research reports and other publications which have discussed this or related topics, and (3) conversations I have had with persons on this subject.[9]

The five major categories of resources are: (1) health manpower, (2) health facilities, (3) health habits or life styles of the population, (4) environment, and (5) genetic stock of the population. The first two categories represent traditionally cited components of health care resources. The latter three represent items not normally thought of as resources in the health care system; however, for performance of some functions they are extremely important components. Health manpower includes physicians, nurses, dentists, specialized therapists and other related workers, especially those involved in primary care. Facilities would include physicians' offices, hospitals, nursing homes, laboratories, clinics, and emergency care equipment and facilities. Health habits of the population have increasingly become important components of health care in communities.[10] Patterns of exercise, diet, rest, coping with stress, smoking behavior and knowledge and experience with first aid are all important resources for changing community health status and/or decreasing the need for primary care.[11] Environment is increasingly becoming recognized as a key component of a community's health resources.[12] As technology increases, altering the physical, biological and to some extent social environments, the number of health hazards increase. Environmental health hazards would include but not be limited to motor vehicle, occupational and home accidents; air, water, noise and sight pollution; and pesticide control problems.

The genetic stock of the population is included as a component in community health since studies of different health problems have shown heredity to be important in the predisposition toward certain types of diseases.[13] Hypertension and cancer along with ethnic related health problems such as Tay Sachs disease among Jews and sickle cell anemia among blacks serve to illustrate rather specifically the role of the genetic component of health.

Functions, Resources and Expectations

To this point in the paper five functions of community health services along with five categories of community health resources have been outlined. In addition, likely patterns of expectations about the relationship of functions and resources by various groupings of persons inside and outside the community have been alluded to. The remainder of the paper is a more detailed examination of the interrelationship among functions, resources and expectations.

Chart 1 portrays health service functions in the rows and health care resources in the columns. The "X's" signify empirically verified or logically expected relationships, the "?'s" questionable relationships and "NR" signifies a judgment of nonrelevance. It is maintained here that groupings of individuals inside and outside communities have expectations about the contribution of resources to functions which may or may not be supported by empirical research.

Improving health status is the only function listed in Chart 1 for which all of the listed health service resources have been posited as being relevant. Various researchers have examined the relative effects of the resources on measures of health status but unfortunately no one researcher has examined the effect of all the resources simultaneously. A paper being

Chart 1. Functions of and Health Care Resources Associated With Community Health Services

Health System Functions	Health Care Resources					
	Health Manpower		Health Facilities	Health Habits, Life Styles	Environment	Heredity
	Physicians	Nurses				
a. Improved health status	?	X	?	X	X	X
b. Provision of primary care	X	X	X	X	X	NR
c. Security of care	X	X	X	NR	NR	NR
d. Medical-legal functions	X	NR	NR	NR	NR	NR
e. Community development functions	X	X	X	NR	X	NR

X - Empirically verified or logically expected relationship.

? - Questionable relationship.

NR - Judgment of nonrelevance.

presented by Miller and Stokes at these meetings is one of the more recent examinations of the effects of health manpower and facilities (along with social structural characteristics) on two indicators of health status (Miller and Stokes, 1976). They found that in general, selected types of health manpower and selected health facilities contributed less to health status than did the selected indicators of social class they used. Miller and Stokes also recognized the potential importance of "life style" and environment in policy decisions when other resources are found to be negatively related to health status. Work by Belloc and associates indicates that health habits contribute substantially to increased longevity and decreased mortality (Belloc, 1973 and Belloc and Breslow, 1972).

By focusing attention solely on health status, and the particular finding that supply of physicians is negatively related to some measures of health status, one can easily neglect other functions of the health care system, and particularly functions performed by physicians. Physicians are key components in the provision of primary care or the meeting of day-to-day medical needs and concerns. Meeting these day-to-day needs may or may not contribute to various measures of health status. However, in the minds of community residents, a more overriding concern is actual availability of primary care to deal with pain, suffering, emergencies and the like, or the presence of physicians or others to deal with potential medical needs (security of care).[14]

Rural communities have had difficulty attracting physicians for a number of reasons (Bible, 1970). This means that either these communities remain "unserved" or "underserved" by physician services or that they look for alternative ways of providing primary care. A number of communities have

explored various alternatives for meeting primary medical care needs.[15] These usually center on care being provided by a physician's assistant, nurse practitioner or other similar categories of practitioners working in conjunction with a physician. Such arrangements can help meet primary care or security of care expectations. Other resources listed in Chart 1 do not contribute to provision of primary care in the usual sense but they can reduce the need for it. That is, an improved work environment, increased numbers of persons trained in first aid procedures, and improved health habits and life styles can all help to reduce the need for primary medical care. In this sense, community residents can help provide their own primary care.

As for medical-legal functions, under most existing legal statutes physicians are the only resource which can meet this desired outcome of community health service systems. To the extent that hospitals or other health facilities employ physicians with time available for certification needs, these facilities can assist in performing this function. It may be that in the future, for such matters as less complex physical examinations and for certification for licenses to operate motor vehicles, other health trained professionals will perform the needed service. However, such trends do not yet appear to be emerging.

To perform the fifth and final function identified in this paper, enhancement of community development, an "adequate" array of manpower and facilities would be the most relevant resources. These appear to be the two resource categories which enhance a community's image for industrial, recreational, or other types of development. The resources of health habits and genetic stock contribute little, if anything, community development. Healthful aspects of a community's environment may be an asset in a community's growth or development.

Summary and Implications

This paper rests on the premise that the health services system in a community performs multiple functions through employment of multiple resources. The purposes of the paper are to explicate: (1) five functions performed by a health service system, (2) five categories of resources which might be used in the performance of these functions, and (3) variations in perceptions by individuals and groups within and without a community regarding the relative importance of the functions and the relationship of functions to resources.

The five functions of a health delivery system outlined were: (1) improved health status, (2) provision of primary care, (3) provision of security of care, (4) medical-legal functions, and (5) community development. The five categories of health resources were: (1) health manpower, (2) health facilities, (3) health habits or life styles, (4) environment, and (5) genetic stock.

It is important that professionals engaged in community health services research or planning, or community development work, be aware that there are multiple outcomes from and multiple resources related to a community's health service system. The community practitioner from outside the community may have certain expectations regarding what a community's health service system should produce. However, community residents and/or leaders may have other expectations regarding outcomes. By recognizing and dealing realistically with such differences, a more appropriate set of health functions would most likely be identified. All sides could be aware of what each other expects of the system. And as a consequence of this, more effective planning for services should emerge.

Just as important as identifying and working out a realistic set of expectations about health service outcomes is the task of identifying appropriate resources to achieve them. If, in fact, as recent literature suggests, increased health manpower and facilities are not associated with decreased mortality, one might logically discourage smaller rural communities from trying to solve that pervasive and frustrating problem of "getting a doctor." However, such logic clearly overlooks other important functions performed by this resource for community residents. Further, before accepting the statement that health manpower and facilities do not contribute to health status, other measures of health status than mortality rates should be considered. Although more difficult to determine, such measures as ability to carry out normal social responsibilities or achievement of higher "levels of well-being" could be considered in relation to resource effectiveness. It seems reasonable to hypothesize that presence of physicians and appropriate use of them would increase health status as measured by these indicators.

Cordes (1975), has suggested that present research on rural health services focuses too much on the consumer side (utilization of and demand for health services) and that a greater need exists for research on the provision or supply side. The considerations put forth in the present paper would indicate that rather than cast the research need in terms of supply or demand, it might be fruitful to view the need from an organization standpoint, using a framework where consumer and provider are both viewed as integral parts of the delivery system.[16] Support for an organizational approach to research on rural health services has been suggested by Kane and Westover (1975), among others.

It may well be that in order for community residents and/or leaders, and health professionals (whether planners, physicians, administrators, or others), to examine completely and jointly the considerations raised in the present paper, an educational program will be needed. Perhaps the parties involved will have a difficult time placing their own views, as well as the views of others, in total perspective. For example, educational assistance may be needed to help a small, rural community understand that the day has passed when it can have its own hospital and/or physician. Other alternatives do exist and need to be examined. A program such as the "Community Health Services Education Project," being developed in the Cooperative Extension Service at Penn State under a Special Needs grant from Extension Service-USDA,[17] would help clarify the positions and the issues.

FOOTNOTES

[1]This paper represents a synthesis of number of ideas not all of which are the author's. The original idea for the paper emerged from discussions at a "Rural Health Care Research Forum" sponsored by the Farm Foundation and the AMA Council on Rural Health and held in Roanoke, Va., in 1975. Preliminary formulation of the paper's ideas were presented at an informal "seminar" of faculty and graduate students in agricultural economics and rural sociology at Penn State. Although it is difficult to recall all individuals who may have contributed to development of the paper, I am particularly grateful for the criticisms and suggestions of Sam Cordes, Carol Riddick, Sam Leadley, Shannon Stokes and Mary Osgood (all from Penn State). The assistance of Dr. R. James Hildreth of the Farm Foundation in formulating the ideas is also recognized. Any errors in the development of the paper, of course, rest solely with the author.

[2]The notion of "health services system" is conceived of very broadly in this paper. It not only includes the usual and more formal components of health manpower, health facilities, various voluntary and public health agencies, but also the capabilities of individuals themselves to "provide" needed services to them or their families. Thus, the notion of system in this paper includes a wide array of more informal arrangements as well as those of a more formal nature.

[3]PL 93-641, the Health Resources Planning and Development Act of 1974, presently being implemented, calls for some major revisions in the planning and development of health services at the local regional, state and national levels.

[4]PL 93-641 spells out in greater detail than PL 89-749 (an earlier health planning act superseded by PL 93-641) standards for consumer participation.

[5]Health status can be measured in a number of different ways. A brief but enlightening discussion of various alternatives is contained in Goldsmiths' article (Goldsmith, 1973).

[6]In the health planning region covering central Pennsylvania, improving primary care has been a top priority of the Central Pennsylvania Health Council (American Medical Association, 1972).

[7]I am especially indebted to Sam Cordes for suggesting this function. He pointed out that in the plains area of western United States, where distance is important, that this is at times an overriding concern.

[8]Fulton (1974), in discussing industrial development in rural areas, notes that one level of community analysis carried out before a final decision is made on industrial location is determination of a town's ability to meet "essential requirements" (presumably health would be included here). Shively (1974), reporting on a study of reasons for locations of 330 industrial plants, found that health services ranked 19th out of 43 factors considered in plant location.

[9]Development of this type of relationship among health status and the several health resources has resulted from many conversations with Drs. R. James Hildreth and Sam Cordes.

[10]Wilson (1971) has coined the term "activated patient" to emphasize the potential for individual initiative in maintaining good health.

[11]A number of writers (Fuchs, 1974; Abelson, 1976; Levine, 1975; Illich, 1975, to mention but a few of many) have emphasized the greater importance of life styles and health habits, relative to the traditional "health care system" resources, in contributing to health status.

[12]A summary of the relationship of environment to health status can be found in Dubos (1968).

[13]Emery (1968), especially in Chapters 5 and 6, reviews the significance of genetics in health status and disease.

[14]The reason for imputing this concern about primary care is the widespread efforts made and being made by communities to get physicians for general practice.

[15]A forthcoming revision of the booklet entitled Health Care Delivery in Rural Areas (AMA, 1976) outlines 26 alternative models for community medical service delivery. A recent federal publication diagrams alternative arrangements for primary care which rural communities may want to consider (Health Services Administration, 1976).

[16]For a discussion of one organizational framework for considering consumers and providers in the delivery of health care, the reader is referred to Crawford (1976).

[17]A brochure describing this program and entitled "An Educational Program for Planning and Developing Community Health Services" is available from the Pennsylvania Cooperative Extension Service, University Park, PA 16802.

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